

What is claimed is :

1. A positive engagement clutch having a torque input side and a torque output side, the clutch comprising a torque input member arranged on the torque input side, a torque output member arranged on the torque output side, first engagement members, second engagement members, and an actuator, the torque input member and the torque output member being arranged concentrically to rotate on a common axis, one of the torque input member and the torque output member carrying the first engagement members, and the other of the torque input member and the torque output member carrying the second engagement members, the first engagement members being radially movable by the actuator between a projecting and a retracted position, and the second engagement members projecting radially into a gap between the torque input member and the torque output member, the first and second engagement members engaging with each other, when the first engagement members are in the projecting position, to progressively engage the torque input and output members to allow the transmission of torque to the torque output side, and the first and second engagement members being disengaged from each other, when the first engagement members are in the retracted position, to prevent the transmission of torque to the torque output side.

20

2. A positive engagement clutch as claimed in claim 1, wherein the first and second engagement members are in the form of ball-bearings.

3. A positive engagement clutch as claimed in claim 1, wherein the first and

second engagement members are in the form of rollers.

4. A positive engagement clutch as claimed in claim 1, wherein the actuator is in the form of a push-rod element having a frusto-conical portion along which the first engagement members can move to take up the projecting position or the retracted position.

5. A positive engagement clutch as claimed in claim 1, wherein the first engagement members are free to move independently of each other.

10

6. A positive engagement clutch as claimed in claim 1, wherein the second engagement members are free to move independently of each other.

7. A positive engagement clutch as claimed in claim 1, wherein the first engagement members are carried by the torque output member, and the second engagement members are carried by the torque input member.

8. A positive engagement clutch as claimed in claim 1 in combination with a rotary coupling, the rotary coupling comprising a driving part, a drivable part, a fixed part in which the driving and drivable parts are each rotatable coaxially, and a set of coupling members carried by one of the driving and drivable parts for torque-transmitting engagement with the other, the coupling members being selectively positionable so that, in a first condition, the coupling members are juxtaposed to a primary annular contact surface of either the fixed part or the drivable

part and, in a second condition, the coupling members are juxtaposed to a secondary annular contact surface of the driving part, each coupling member being free to move relative to the driving and drivable parts into and out of engagement with the primary and secondary annular contact surfaces, the arrangement being such that, when the coupling members are in the first condition, the application of a first torque on the coupling members causes the coupling members to engage the primary annular contact surface and, when the coupling members are in the second condition, the application of a second torque on the coupling members causes the coupling members to engage the secondary annular contact surface.